

"APPROVED FOR RELEASE: 08/22/2000

CIA-RDP86-00513R000412010006-7

APPROVED FOR RELEASE: 08/22/2000

CIA-RDP86-00513R000412010006-7"

EFENDI, M.E.

[Handbook on natural building materials for petroleum-producing districts of Azerbaidzhan] Spravochnik po prirodnyim stroitel'nyim materialam dlia neftianyykh raionov Azerbaidzhana. Moskva, Gostop-tekhizdat, 1954. 216 p. (MLBA 7:11D)

EFENDI, M.E.

Study of physicomachanical properties of limestones in the
Apshehon Peninsula. Uch.zap.AGU. Geol.-geog.ser. no.1:31-42
'59. (MIRA 15:12)

(Apshehon Peninsula--Limestone)

MAMEDOV, R.G.; BEKHBUDOV, A.K., red.; EFENDI, M.E., red.;
YAGMUROVA, T., red. izd-va; IBRAGIMOV, M., tekhn.red.

[Agrophysical characteristics of soils in the piedmont and lowland parts of the Nakhichevan A.S.S.R. for the purpose of working out the bases of irrigation and their efficient use in agriculture] Agrofizicheskaya kharakteristika pochv predgornoi i nizmennoi chasti Nakhichevanskoi ASSR v tseliakh rasrabotki osnov orosheniya i ratsional'nogo ispol'zovaniya ikh v sel'skom khoziaistve. Baku, Izd-vo AN Azerb.SSR, 1963. 258 p. (MIRA 16:8)

(Nakhichevan A.S.S.R.—Soil physics)

EFENDIC, Suad; TURINA, Marko

Effect of hyaluronidase on recent syphilis. Rad. med. fak. Zagreb.
10 no.1:75-80 '62.

(SYPHILIS)

(HYALURONIDASE)

YUGOSLAVIA

SEKSO, M., Dr.; EFENDIC, S., Dr.; HITREC, V., Dr.: Department of Internal Diseases and Central Laboratory for Experimental Medicine, Dr M. Stojanovic General Hospital, Zagreb (Klinika za unutrasnje bolesti i Centralna laboratorija za eksperimentalnu medicinu Opste bolnice "Dr M. Stojanovic" u Zagrebu), Zagreb.

"Diagnostic Value of the Determination of Cholesterol in Thyroid Disorders"

Zagreb, Liječnicki Vjesnik, Vol 88, No 3, 1966, pp 249-253

Abstract [Authors' English summary modified]: A total of 128 patients were observed: 30 with hyperthyroidism, 19 with pronounced primary hypothyroidism, and 79 with euthyroid goiter. The cholesterol values in the serum were significantly reduced in hyperthyroidism and greatly increased in hypothyroidism, while they were normal in patients with euthyroid goiter. The possibility of hypothyroidism very likely does not exist at all if cholesterol values are normal (150-200 mg%). Tables. 4 Yugoslav and 23 Western references. Manuscript received 20 Sep 65.

1/1

KARGIN, V.A., akademik; EFENDIYEC, A.A.; BERESTNEVA, Z. Ya.

Spontaneous formation of large oriented structures in a non-regular copolymer of the diethyl ester of vinylphosphinic acid and acrylic acid. Dokl. AN SSSR 157 no.1:125-126 J1 '64
(MIRA 17:8)

1. Fiziko-khimicheskiy institut im. L. Ya.Karpova.

S/081/63/000/004/043/051
B160/B186

AUTHORS: Mamedaliyev, Yu. G., Mamedaliyev, G. M., Aliyev, S. M.,
Efendiyev, A.

TITLE: Polymerization of the 130 - 160°C styrene fraction of resin
obtained from the pyrolysis of hydrocarbon gases in the pres-
ence of isopropyl benzene hydroperoxide

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1963, 605, abstract
4T41 (Azerb. khim. zh., no. 1, 1962, 17 - 22 [Summary in:
Azerb.])

TEXT: An investigation was made into the polymerization of the 130 -
160°C styrene fraction of resin obtained from the pyrolysis of hydrocarbon
gases in the presence of isopropyl benzene hydroperoxide. A study was
made of the effect of temperature (80° - 120°C), the duration of the re-
action (10 - 30 hrs) and the amount of initiator (1.25 - 2.98 % by weight)
on the polymerization process; the solid polymer output proved to be 41 %
of the raw material at 80°C with an initiator concentration of 1.25 %
after 30 hrs. Compositions were obtained on the basis of the synthesized
polymers and industrial polystyrene and their physico-mechanical proper-
Card 1/2

Polymerization of the ...

S/081/63/000/004/043/051
B160/R186

ties were studied. It was established that molding materials based on the 130 - 160°C fraction polymers and polystyrene are heat-resistant to 101 - 102° and 106 - 108°C respectively (according to the Vicat test); the Brinell hardnesses are 14 - 15 and 15 - 16 kg/mm²; the tangents of the angle of dielectric loss at a current frequency of 10 cps are 0.0006 - 0.0007 and 0.0002 and the dielectric constants at a current frequency of 10 cps are 2.6 and 2.6. [Abstracter's note: Complete translation.]

Card 2/2

EFENDIYEV, A.A.; CHERNEVA, Ye.P.; TUNITSKIY, N.N.; KARGIN, V.A.

Kinetics of ion extraction by polymeric complex-forming films.
Zhur. fiz. khim. 38 no.4:1035-1038 Ap '64. (MIRA 17:6)

1. Fiziko-khimicheskiy institut imeni L.Ya. Karpova.

KARGIN, V.A. akademik; EFENDIYEV, A.A.; CHERNEVA, Ye.P.; TUNITSKIY, N.N.

Preparation and study of a homogenous polymeric membrane having
complex-forming properties. Dokl. AN SSSR. 144 no.6:1307-1308
Je '62. (MIRA 15:6)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova.
(Membranes (Chemistry)) (Polymers)

KARGIN, V.A., akademik; EFENDIYEV, A.A.; BERESTNEVA, Z.Ya.

Electron microscope study of the structure of a copolymer of diethyl ester of vinylphosphinic acid and acrylic acid having complex-forming properties. Dokl. AN SSSR 155 no.6:1401-1403 Ap '64. (MIRA 17:4)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova.

L 21426-66 EVT(m)/EWP(j)/T RM/WW

ACC NR: AP6010429

SOURCE CODE: UR/0020/66/167/002/0384/0385

AUTHOR: Kargin, V. A. (Academician); Berestneva, Z. Ya.; Bogdanov, M. Ye.;
Efendiyev, A. A.

ORG: Physicochemical Institute im. L. Ya. Karpov (Fiziko-khimicheskiy institut)

TITLE: The problem of ordering in amorphous polymers 1.4.55

SOURCE: AN SSSR. Doklady, v. 167, no. 2, 1966, 384-385

TOPIC TAGS: amorphous copolymer, ordered structure, supramolecular structure,
morphological form, globule, fibril

ABSTRACT: A study has been made of the structure of the allylbarbituric acid-
acrylic acid copolymer prepared by radical copolymerization. The copolymer is
amorphous and noncrystallizing by virtue of its irregular structure. However, from
dilute aqueous solutions (10^{-1} — 10^{-2} g/100 ml; pH, 1.0) the copolymer was shown to
form large ordered structures. These structures are highly oriented, exhibit marked
optical anisotropy, and consist both of globular and fibrillar formations. Orig.
art. has: 3 figures. [BO]

SUB CODE: 07, 11/ SUBM DATE: 02Jun65/ ORIG REF: 003/ ATD PRESS: 4221

Card 1/1 *UR*

UDC: 539.213

DVORKIN, P.M. (g.Baku); EFENDIYEV, A.M (g.Baku)

Experience in the regulation of mountain streams. Put' i put.khoz.
5 no.10:37-38 0 '61. (MIRA 14:10)
(Rivers--Regulation) (Railroads--Maintenance and repair)

EFENDIYEV, A.M., inzh.

Experience in the reinforcement of river crossings. Put' 1 put.
khoz. 6 no.11:40 '62. (MIRA 16:1)
(Railroad bridges)

EFENDIYEV, A.M.

Structures have to be safe. Put' put.khoz. 8 no.2:31 '64.
(MIRA 17:3)

1. Starshiy inzh. otдела dorogi, Baku.

EFENDIYEV, A.M., starshiy inzh. (Baku)

Barrages are a reliable protection of tracks against flood waters.
Put' 1 put.khoz. 9 no.8:24-25 '65.

(MIRA 18:8)

16.3400

S/055/62/000/003/002/003
D257/D309

AUTHOR: Efendiyev, A.R.

TITLE: Two theorems on the stability of motion

PERIODICAL: Moscow. Universitet. Vestnik. Seria I. Matematika,
Mekhanika, no. 3, 1962, 9-14

TEXT: The author presents generalizations of R. Bellman's and Ye. I. Dykhman's (Izv. AN KazSSR, no. 4, 73-85, 1950) theorems on the stability of non-perturbed motion of non-autonomous systems of differential equations, for the case of a variable matrix. In the proof, the method of reducing differential equations to integral equations, and the theorem of K.P. Persidskiy (Izv. AN KazSSR, ser. matem. i mekh., no. 5, 3-25, 1951) are used. The most important English-language reference reads as follows: 1) Bellman, R. On the boundedness of solutions of non-linear differential and difference equations. Trans. Amer. Math. Soc. 62, no. 3, 357-386, 1947. ✓B

ASSOCIATION: Kafedra differentsial'nykh uravneniy (Department of
Card 1/2

Two theorems on the stability ...

S/055/62/000/003/002/003
D257/D309

Differential Equations)

JB

SUBMITTED: October 24, 1961

Card 2/2

S/055/63/000/001/002/008
D251/D308

AUTHOR: Efendiyev, A. R.

TITLE: On the region of influence of a singular point of higher order

PERIODICAL: Moscow. Universitet. Vestnik. Seriya I. Matematika, Mekhanika, no. 1, 1963, 14-25

TEXT: The author considers the question of the region of influence of a singular point of higher order for some special multi-dimensional systems of differential equations. The definition of a region of influence given by V. V. Nemytskiy (Trudy MMO, v. 5, 455-483, 1956) is adopted. The system of differential equations

$$\frac{dx_i}{dt} = \sum_{j=1}^n c_{ij} x_j^k, \quad i = 1, 2, \dots, n \quad (2)$$

Card 1/5

S/055/63/000/001/002/008
D251/D308

On the region of ...

$k_j = 2p_j$, $p_j \geq 1$, and the derived system

$$\frac{dx_i}{dt} = \sum_{j=1}^n c_{ij} x_j^{k_j} \quad (3)$$

where $k_i = k = 2p$ are considered. It is proved that: Theorem 1: If the rank of the matrix $\|c_{ij}\|$ equals n , then an arbitrary bounded region does not contain as a whole a single trajectory of the system (2), excluding the singular point. Lemma: For the singular point $O(0, 0, \dots, 0)$ of system (3) to be unique (the rank of $\|c_{ij}\|$ being $n-m$) it is sufficient that for a single index i

$$M_{ii} = k_i^{(1)} > 0,$$

Card 2/5

S/055/63/000/001/002/008
D251/D308

On the region of ...

$$M_{2i} = k_i^{(2)} = k_{n-m+1}^{(2)} k_i^{(1)} > 0,$$

$$M_{3i} = k_i^{(3)} + k_{n-m+1}^{(3)} k_i^{(1)} + k_{n-m+2}^{(3)} k_i^{(2)} + k_{n-m+2}^{(3)} k_{n-m+1}^{(2)} k_i^{(1)} > 0,$$

.....

$$M_{mi} = k_i^{(m)} + k_{n-m+1}^{(m)} k_i^{(1)} + \dots + k_{n-1}^{(m)} k_i^{m-1} + \dots +$$

$$+ k_{n-1}^{(m)} k_{n-2}^{(m-1)} k_i^{(m-2)} + \dots + k_{n-1}^{(m)} k_{n-2}^{(m-1)} \dots k_{n-m+1}^{(2)} k_i^{(1)} > 0 \quad (8)$$

Card 3/5

On the region of ...

S/055/63/000/001/002/008
D251/D308

are satisfied simultaneously. Additional conditions for necessity are given. Theorem 3: If the rank of $\|c_{ij}\|$ for (3) equals $n-m$ and one of the conditions of (8) is fulfilled, then an arbitrary bounded region will not contain as a whole a single trajectory of (3) excluding the singular point. It is stated that the above lemma and theorem 2 also hold for the system (2). This result is a generalization of a result of Movshovich (Vestn. Mosk. un-ta, Ser. matem. mekh., no. 6, 3-11, 1959). Analogous theorems are then proved for the system of equations

$$\frac{dx_i}{dt} = \sum_{j,k=1}^n c_{jk}^i x_j^p x_k^p \quad (23)$$

Card 4/5

On the region of ...

S/055/63/000/001/002/008
D251/D308

$$\frac{dx_i}{dt} = \sum_{j,k=1}^n c_{jk}^i x_j^p x_k^p + \varphi_i(t, x_1, x_2, \dots, x_n) \quad (24)$$

where $c_{jk}^i = c_{kj}^i$, using the sufficiency conditions of N. N. Krasovskiy's theorem. By taking $p = 1$ in (23), it follows, with the aid of some results of Lawrence Markus, that, for $p = 1$ the algebra A_n corresponding to the system (3) has an orthogonal basis.

ASSOCIATION: Kafedra differentsial'nykh uravneniy (Department of Differential Equations)

SUBMITTED: January 19, 1962

Card 5/5

ALIYEV, R.G.; EFENDIYEV, A.R.

Applying Seidel's method to a certain boundary value problem.
Dokl. AN Azerb. SSR 21 no.2:3-9 '65.

(MIRA 18:5)

1. Dagestanskiy gosudarstvennyy universitet.

U S S R J

✓6361 A71-11942

INVESTIGATION OF THE INITIAL STAGE OF SPARKING.
V. V. Moshayeva, I. S. Zakharenko, and A. Z. Medvedev.
Translated from Zhur. Tekh. Fiz. 20, 308-26; 33-32(1950).
66p. Available from Charles A. Meyer and Co., Inc.,
Hempstead, N. Y. (F-75-4127-RE).

A detailed description is first given of the experimental investigations made to obtain data on the conditions within spark discharges. Ten different spark generator circuits that were used are described fully. All spark oscillograms were recorded by an oscillograph, and circuits are given which record the current in the spark. The results obtained from each spark generator arrangement are analyzed completely. (B.J.L.)

42
(2)

EFENDIYEV, A. Z.

EFENDIYEV, A. Z. - "Investigation of an Impulse Spark-Over of Gases and the Speed of Development of Electron Avalanches." Sub 8 Mar 52, Inst of Physical Problems imeni S. I. Vavilov. (Dissertation for the Degree of Candidate in Physicomathematical Sciences).

SO: Vechernaya Moskva January-December 1952

"APPROVED FOR RELEASE: 08/22/2000

CIA-RDP86-00513R000412010006-7

APPROVED FOR RELEASE: 08/22/2000

CIA-RDP86-00513R000412010006-7"

AUTHOR: EFENDIYEV, A.Z. PA - 3555
TITLE: Investigation of Pulse Breakdown of a Gas and of Avalanche Development Velocity. (Issledovaniye impul'snogo proboya gazov i skorosti razvitiya elektronnykh lavin, Russian)
PERIODICAL: Zhurnal Tekhn. Fiz., 1957, Vol 27, Nr 5, pp 1010 - 1018 (U.S.S.R.)
ABSTRACT: The velocity of the Development of electron avalanches was investigated in various gases which differ considerably with respect to electric strength. The breakdown of the various gases was investigated in the case of rather short voltage pulses and various amounts of overvoltage. This made it possible to determine the time necessary for the forming of the discharge in dependence of field voltage. When determining the velocity of the development of electron avalanches the streamer theory of breakdown served as a basis. If such conditions are created for the experiment that the electron avalanche is able to pass through the entire length of the gas interval, the quotient obtained by dividing the length of the gas interval by the time τ of the formation of the discharge can be looked upon with sufficient approximation as the velocity of the development of the electron avalanche. Investigations were carried out of: air, SF₆, and helium without any special purification. For the investigation of the pulse-gas-breakdown an oscillograph was used by which the breakdown was registered,

Card 1/2

PA - 3555

Investigation of Pulse Breakdown of a Gas and of Avalanche Development Velocity.

Experimental results:

1) The velocity of the development of electron avalanches is not only a function of X/p (X - field voltage, p - pressure), but it also depends essentially on the nature of the gas. 2) In the investigated interval of the modification of X/p the velocity of the development of the electron avalanche is in first approximation a linear function of X/p . X/p changes within the following limits: a) in helium from 11.9 to 34.5, b) in air from 33 to 62, c) in SF_6 from 83 to 111 cm/mm torr.

(With 1 table, 11 illustrations, and 5 Slavic references)

ASSOCIATION: Dagped Institute, Makhach-Kala

PRESENTED BY:

SUBMITTED: 27.9.1956

AVAILABLE: Library of Congress

Card 2/2

L 10247-63

ASD--RDW/JD

EWP(q)/EWT(m)/EDS--AFFTC/

ACCESSION NR: AP3001003

S/0109/63/008/006/1040/1044

AUTHOR: Efendiyev, A. Z.; Zhokhov, V. Z.

TITLE: Impulse breakdown of selenium rectifiers

57

SOURCE: Radiotekhnika i elektronika, v. 8, no. 6, 1963, 1040-1044

TOPIC TAGS: selenium rectifier

ABSTRACT: An experimental investigation of the reverse current when voltage impulses with about $10 \text{ sup } -8 \text{ sec.}$ front were applied to an AVS-18-12 selenium rectifier is described. The impulse voltage was built up to the breakdown point, and the time of formation of the p-n-junction breakdown was measured by a double-trace oscillograph. The time of formation was within $(42 \text{ to } 4) \times 10 \text{ sup } -6 \text{ sec}$ when the field strength varied from $10 \text{ sup } 5$ to $2.2 \times 10 \text{ sup } 5 \text{ v/cm}$. The current-voltage characteristic shows that impact ionization might have preceded the breakdown. A resistor connected in series with the rectifier delayed the breakdown. "The authors express their deep appreciation to Kh. I. Amirkhanov for his constant attention to their work and for his valuable suggestions." Orig. art. has: 5 figures, 1 formula, and 1 table.

Card 1/2/

EFENDIYEV, A.Z.; DZHAMALOVA, A.S.

Pulse breakdown of copper oxide rectifiers. Izv. vys. ucheb.
zav.; fiz. no. 3:124-127 '64. (MIRA 17:9)

1. Dagestanskiy gosudarstvennyy universitet imeni Lenina.

L 28514-66 EWT(1)

ACC NR: AR6000074

SOURCE CODE: UR/0275/65/000/009/B020/B020

AUTHOR: Efendiyev, A. Z.; Zhokhov, V. Z.; Mamedov, M. G.; Dzhamalova, A. S,

TITLE: Investigation of pulse breakdown in semiconductor rectifiers

SOURCE: Ref. zh. Elektronika i yeye primeneniye, Abs. 9B153

REF SOURCE: Sb. Probay dielektrikov i poluprovodnikov. M.-L., Energiya, 1964, 315-318

TOPIC TAGS: selenium rectifier, semiconductor rectifier, dielectric breakdown, germanium semiconductor

ABSTRACT: The results of experimental investigations of pulse breakdowns of cuprous oxide, selenium, and point-contact germanium rectifiers are discussed in detail. It is shown that the time required for breakdown of cuprous oxide rectifiers is 0.4 to 12 μ sec at a field strength of $(1.46 \text{ to } 2.56) \cdot 10^6 \text{ v/cm}$; for the selenium rectifiers, 4 to 42 μ sec at $(6 \text{ to } 11.5) \cdot 10^5 \text{ v/cm}$; and for germanium rectifiers, $\sim 1 \mu$ sec. The resistance of the rectifier slows down the breakdown process. After the breakdown, all the volt-ampere characteristics have drop regions. The relationship between the time required for development of breakdown and the field strength is similar to that between the time required for development of gas avalanches and the field strength. The time required for rectifier breakdown is of the same order as

Card 1/2

L 28514-66

ACC NR: AR6000074

that required for the breakdown of thin dielectric films. This indicates the importance of impact ionisation and the development of electron avalanches. The oscillograms registered repeated short-period breakdown of selenium rectifiers, after which the properties of the rectifiers were restored. Refs.: 17. (Translation of abstract) (S.A.)

SUB CODE: 09/ SUBM DATE: none

Card 2/2 CC

L 42955-66 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AR8015871

SOURCE CODE: UR/0275/65/000/0127/B021/B021

AUTHOR: Efendiyev, A. Z.; Mamedov, M. G.

TITLE: Investigation of pulse breakdown of germanium diodes

SOURCE: Ref. zh. Elektronika i yeye primeneniye, Abs. 12B158

REF. SOURCE: Sb. aspirantsk. rabot. Dagestansk un-t. Yestestv. i fiz.-matem. n. Makhachkala, 1964, 93-99

TOPIC TAGS: germanium diode, volt ampere characteristic, pulse oscillator

ABSTRACT: Pulse inverse voltage was supplied from a special oscillator to a type D2-D point-contact germanium diode. The magnitude of the current pulse through the diode and the voltage drop on it were determined by means of an oscillograph. The totality of these values at different magnitudes of the pulse of the oscillator determined the volt-ampere characteristics of the diode. A characteristic was obtained with a section of negative differential resistance. The time of the development of the breakdown was determined ($\sim 10^{-8}$ sec). [Translation of abstract] Bibliography of 6 titles. Abstractor's note. There are no data in the article pertaining to the experiment: pulse front duration, repetition frequency, etc. The interpretation of some of the results of the experiment gives rise to doubt. L. L.

L 09361-67 EWP(m)/EWP(t)/EPI IJP(c) JD

ACC NR: AK023418

SOURCE CODE: UR/0139/66/000/003/0093/0097

AUTHOR: Efendiyev, A. Z.; Zhokhov, V. Z.

ORG: Dagestan State University im. V. I. Lenin (Dagestanskiy gosuniversitet)

TITLE: Pre-breakdown state of selenium rectifiers

SOURCE: IVUZ. Fizika, no. 3, 1966, 93-97

TOPIC TAGS: selenium rectifier, dielectric breakdown, electric measurement, temperature dependence, pn junctions

ABSTRACT: The authors report results of an experimental investigation of the pre-breakdown and breakdown state of commercially produced selenium rectifiers in the temperature interval from 100 to -196C, following application of a single voltage pulse with steep front in the inverse direction (pulse front duration 10^{-8} sec). The time necessary for the formation of the breakdown as a function of the temperature was measured by a procedure described by the authors earlier (Radiotekhnika i elektronika v. 8, 1040, 1963). A pulse technique was used to prevent overheating of the sample. Measurements were made of the temperature dependence of the breakdown formation time, of the voltage dips or of the current pulses, and of the effect of a strong field in the p-n junction in a selenium rectifier. The dependence of the time of breakdown formation on the overvoltage and on the temperature was determined in pn junctions of the selenium rectifier, the occurrence of current pulses both before and during the breakdown was monitored, and it was established that the breakdown in the

Card 1/2

L 09361-67

ACC NR: AF6023418

np junctions is the result of simultaneous action of the Zener effect and impact ionization effect. The authors thank Professor Kh. I. Amerikhanov for continuous interest in the work. Orig. art. has: 3 figures and 2 tables.

SUB CODE: 20/ SUBM DATE: 19Oct64/ ORIG REF: 013/ OTH REF: 004

Card

2/2

"APPROVED FOR RELEASE: 08/22/2000

CIA-RDP86-00513R000412010006-7

~~DEFENDIVE~~

APPROVED FOR RELEASE: 08/22/2000

CIA-RDP86-00513R000412010006-7"

EFENDIYEV D.A.
AKHMEDLI, M.K.; EFENDIYEV, D.A.

Determining the composition of sediments in the system BaCl_2 - Na_2SO_4 - H_2O by physicochemical analysis [in Azerbaijani with summary in Russian]. Uch. zap. AOU no.3:25-41 '57. (MIRA 11:1)
(Barium sulfate--Analysis)

AKHMEDLI, M.K.; BEKENDIYEV, D.A.

Thiosemicarbazide as an analytic reagent. Uch.zap.AGU.
Fiz.-mat.i khim.ser. no.1:93-100 '59.

(MIRA 13:6)

(Carbohydrazide)

AKHMEDLI, M.K.; MEENDIYEV, D.A.

Physicochemical analysis of the composition of precipitates.

Part 5: Study of the system $\text{CuSO}_4 - \text{SCN}_2\text{H}_5 - \text{H}_2\text{O}$. Uch.zap.

AGU. Fiz.-mat. i khim. ser. no. 2:65-79 '59.

(MIRA 13:12)

(Chemistry, Analytical)

EFENDIYEV, D. A., Cand Chem Sci -- (diss) "An Investigation of the Chemical Composition of the Precipitates of Some Heterogeneous Systems by Physical-Chemical Analysis." Baku, 1960, 22 pp with illustrations, (Ministry of Higher and Secondary Specialist Education USSR; Azerbaydzhan State Univ im S. M. Kirov) 100 copies, no price given (KL 21-60, 119)

KRUMAN, B.B.; EFENDIYEV, D.A.

Problems relative to the investigation of beam wells. Trudy Inst.
geol. i geofiz. AN Kazakh. SSR 1:116-132 '63. (MIRA 16:7)
(Azerbaijan—Oil well pumps)

EFENDIYEV, I.K., doktor med. nauk; EFENDIYEV, E.M., prof., red.;
SULTANOV, M.S., red.

[History of medicine in Azerbaijan from ancient times to
the 19th century] Istorii meditsiny v Azerbaidzhane s
drevneishikh vremen do XIX veka. Baku, Izd-vo AN Azerb.SSR,
1964. 277 p. (MIRA 17:8)

EFENDIYEV, F.A.

efendiyev, F.A. "Subsequent complications of bullet wounds of the chest from the data of the medical institute of the Azerbaydzhian SSR," Trudy XXV Vsesoyuz. s'yezda khirurgov. Moscow, 1948, p. 182-89

SO: U-3264, 10 April 1953, (Letopis 'Zhurnal 'nykh Statev, No. 3, 1949)

EFENDIYEV, F. A.

20135 EFENDIYEV, F. A. Endoskopiya pri ognestrel'nykh empiyemakh plevry.
Vsb: Voprosy grudnoy knirurgii. T.P.M., 1949, s. 95-101

SO: LETOIS ZHURNAL STATEY, Vol. 27, Moskva, 1949

EFENDIYEV, F. A.

Summaries of papers presented at the XXVI Congress of Surgeons of the USSR, Moscow, 20 - 27 January 1955, included:

The Role of the Vago-Carotid Blockade in the System of
Operative Period Treatment in Abdominal Operations.

F. A. EFENDIEV

SOURCE: ~~Top Secret~~ A-46013 (Official Publication) Unclassified.

USSR/Human and Animal Physiology - Blood. Blood Transfusion
and Blood Substitutes.

T-3

Abs Jour : Ref Zhur - Biol., No 18, 1958, 84053

Author : Efendiyev, F. ~~A.~~, Goncharskaya, T.Ya.

Inst :

Title : Preservation of Leukocytic Mass for the Therapy of Leuko-
penic Conditions.

Orig Pub : Azerb. tibb. zh., 1957, No 2, 3-9 (azerb.), 53-58 (russk).

Abstract : No abstract.

Card 1/1

EFENDIYEV, F.A., professor

"Blood preparations and blood substitutes" by V.A.Agranenko.
Reviewed by F.A.Efendiev. Probl.gemat. i perel.krovi 2 no.3:
56-58 My-Je '57. (MIRA 10:8)
(BLOOD PLASMA SUBSTITUTES) (AGRANENKO, V.A.)

USSR/Human and Animal Physiology (Normal and Pathological).
Blood. Transfusions and Blood Substitutes. T

Abs Jour: Ref Zhur-Biol., No 17, 1958, 79433.

Author : Efendiyev, F.A.; Goncharskaya, T.Ya.; Rzayev, N.M.

Inst :

Title : Clinical Observations on Transfusions of Dry Plasma
Dissolved in Antishock Liquid (According to a
Prescription of the AzIPK [Azerbaijani Institute of
Blood Transfusion]).

Orig Pub: Sb. nauchn. tr. Azerb. n.-i. in-ta perelivaniya krovi,
1957, vyp. 3, 11-17.

Abstract: The antishock disintoxicated liquid of the AzIPK
is a colloid solution which contains isogenetic
plasma $MgSO_4$ (0.4%), resatone [sic] (0.004%),
and ascorbic acid. High effectiveness and sin-

Card : 1/2

EFENDIYEV, F.A., prof., zasluzhennyy deyatel' nauki, NYVAZOV, B.A., prof.
~~zasluzhennyy deyatel' nauki~~, ABDULAYEV, D.M., prof., zasluzhennyy deyatel'
nauki, SELIMKHANOV, G.A., MAMEDBEKOVA, L.A., TER-KASPAROVA, I.R.,
SULTANOVA, Sh.A., MUSAYEV, Ya.A., ATAKISHIYEV, A.R., ABDULLAYEV, V.M.

Dzhalil Iusufovich Guseinov; on his 60th birthday. Arkh.pat. 20
no.7:93-94 '58 (MIRA 11:9)

1. Chleny Azerbaydzhanskogo obshchestva patologoanatomov (for
Selimkhanov, Mamedbekova, Ter-Kasparova, Sultanova, Musayev, Atakishiyev,
Abdullayev, V.M.)
(GUSEINOV, DZHALIL IUSUFOVICH, 1896-)

EFENDIYEV, F. A.

"The Express-Method for the treatment of Hemothorax."

paper presented at the 6th International Congress on Diseases of the Chest of the American College of Chest Physicians, Vienna, Austria, 28 Aug-1 Sep 1960.

EFENDIYEV, F.A., prof.; AKHUNDOVA, A.M.

Effectiveness of splenectomy in various diseases of the hematopoietic system. Probl.gemat.i perel.krovi 5 no.1:21-24 Ja '60.

(MIRA 14:6)

1. Iz Azerbaydzhanskogo nauchno-issledovatel'skogo instituta gematologii i perelivaniya krovi (dir.- dotsent G.A.Guseynov) i fakul'tetskoy khirurgicheskoy kliniki (zav. - prof. F.A.Efendiyev) Azerbaydzhanskogo meditsinskogo instituta.

(ANEMIA)

(SPLEEN SURGERY)

EFENDIYEV, F.A.

Pathogenesis and treatment of embolic thrombosis. Izv.
AN Azerb. SSR, Ser. biol. i med. nauk no.4:73-79 '61.
(MIRA 14:7)

(THROMBOSIS)

EFENDIYEV, F. A., prof.; ABDULLAYEV, M. M.; BAKHSHIYEVA, Ye. B. [deceased]

Changes in blood coagulation factors and fibrinolytic activity in leucoses. Probl. gemat. i perel. krovi no.10:19-28 '61.

(MIRA 14:12)

1. Iz Azerbaydzhanskogo nauchno-issledovatel'skogo instituta gematologii i perelivaniya krovi (dir. - dotsent G. A. Guseynov) i fakul'tetskoy khirurgicheskoy kliniki (dir. - prof. F. A. Efendiyev) Azerbaydzhanskogo gosudarstvennogo meditsinskogo instituta.

(LEUCOSIS) (BLOOD—COAGULATION) (FIBRINOLYSIS)

EFENDIYEV, F.A.; RZAYEV, N.M.; MUSTAFAYEV, R.A.

Resuscitation of the organism after clinical death caused by air embolism. Dokl. AN Azerb. SSR 17 no.12:1185-1188 '61.

(MIRA 15:2)

1. Institut eksperimental'noy i klinicheskoy meditsiny AN AzSSR.
(RESUSCITATION) (EMBOLISM)

EFENDIYEV, F. A., prof.; AKHUNDOVA, A. M., starshiy nauchnyy sotrudnik;
ABDULLAYEV, M. M.

State of the coagulation system and fibrinolytic activity of the
blood in splenomegaly of varied etiology. Khirurgiia no.2:3-8
'62. (MIRA 15:2)

1. Iz Azerbaydzhanskogo nauchno-issledovatel'skogo instituta
gematologii i perelivaniya krovi (dir. - dotsent G. A. Guseynov)
i fakul'tetskoy khirurgicheskoy kliniki (sav. - prof. F. A.
Efendiyev) Azerbaydzhanskogo meditsinskogo instituta. 2. Chlen-
korrespondent Akademii nauk Azerbaydzhanskoy SSR (for Efendiyev).

(SPLEEN—HYPERTROPHY AND DILATATION)
(BLOOD—COAGULATION) (FIBRINOLYSIS)

EFENDIYEV, F.A.; AKHUNDOVA, A.M.

Use of blood stabilized by calcium chloride in thrombocytopenic
cases. Trudy Inst. eksp. i klin. khir. i gemat. AN Gruz. SSR 10:231-
236 '62. (MIRA 16:2)
(BLOOD PLATELETS) (BLOOD—TRANSFUSION)

TOPCHIBASHEV, I.M.; EFENDIYEV, F.A., red.; DZHAFAROVA, A., red.
izd-va; KARAGIMOV, M., tekhn. red.

[Cancer of the pancreas and Vater's papilla] Rak podzheludochnoi zhelezy i faterova sosochka. Baku, Izd-vo Akad. Azerbaidzhanskoi SSR, 1963. 311 p. (MIRA 16:7)
(PANCREAS--CANCER) (DUODENUM--CANCER)

EFENDIYEV, F.A.; RZAYEV, M.M.

Treatment of pulmonary infarction with heparin. Trudy Inst.
klin. i eksper. kard. AN Gruz. SSR 8-235-230 '63. (MIRA 17:7

1. Otdeleniye grudnoy khirurgii: fakul'tetskoy khirurgicheskoy
kliniki pediatricheskogo i sanitar'-gigiyenicheskogo fakul'
tativ Azerbaydzhanskogo meditsinskogo instituta imeni N.Narzikova.
Baku.

EFENDIYEV, F.A., red.; ABDULAYEV, D.M., red.; MAMEDOV, Z.M., red.;
GUSEYNOV, D.Yu., red.; GASANOV, Kh.A., red.; RZAYEV, N.M.,
red.; KERIMOV, G.M., red.; ABDULLAYEV, M.M., red.

[Problems of cardiovascular and endocrine pathology] Vop-
rosy serdechno-sosudistoi i endokrinnoi patologii. Baku,
Izd-vo AN Azerbaidzh.SSR, 1964. 195 p. (MIRA 17:12)

1. Azerbaidzhanskiy institut eksperimental'noy i kliniche-
skoy meditsiny.

EFENDIYEV, F.A., prof. [deceased]; AKHUNDOVA, A.M.; ABDULLAYEV, M.M.

Effectiveness of splenectomy in some diseases of the blood system. Report No.2: Splenectomy and hormone therapy in Werlhof's disease. Probl. gemat. i perel. krovi 9 no.3: 11-15 Mr '64. (MIRA 17:10)

1. Fakul'tetskaya khirurgicheskaya klinika (zav.- prof. F.A. Efendiyev [deceased]) Azerbaydzhanskogo gosudarstvennogo meditsinskogo instituta imeni Narimanova i klinika-gematologicheskoye otdeleniye (zav. A.M. Akhundova) Azerbaydzhanskogo nauchno-issledovatel'skogo instituta gematologii i perelivaniya krovi (dir.- dotsent G.A. Guseynov). 2. Chlen-korrespondent AN AzSSR (for Efendiyev).

1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
PROCESSES AND PROPERTIES INDEX																			
<p>7</p> <p>Spectral analysis of Au in ores. V. V. Neiler and F. M. Klendiev. <i>Leningradskaya Lab.</i> 10, 1047 (1941); <i>Chem. Zvest.</i> 1943, 11, 1213. From 5 to 10 g. of the Au ore is used for the analysis. Detailed directions are given for preparing a suitable soln. of AuCl₃ either (a) by wet extn. with aqua regia or (b) by fusion with litharge, borax, sodium and soda, treatment of the resulting regulus with TiNO₂ to remove Pb, filtering and dissolving the residue in aqua regia. To 20 ml. of the final soln., add 2 ml. of 0.1% Pt soln. and introduce the mixt. into the spect. gap at the rate of 2-3 ml. in 5 min. The work reported was done with a Hilger spectrograph. The Au line 2670 Å. and the Pt line 2668 Å. of the spectrogram obtained were photometrically compared with a semiautomatic microphotometer. The Au content was detd. graphically from the log of the quotients of the galvanometer throws for the Au and the Pt lines (log I_{Au}/I_{Pt}). The accuracy of the method is ~4%. M. G. Moise</p>																			
<p>430-556 METALLURGICAL LITERATURE CLASSIFICATION</p>																			

ERENDIYEV, F. M.

USSR/Physics

Spectrochemical Analysis
Microchemical Analysis

May/Jun 1947

"Combined Spectrochemical Analysis of Micro-elements,"
F. M. Erendiyev, 6 pp

"Is Ak Nauk SSSR, Ser Fiz" Vol II, No 3

Discusses determination of the presence of micro-
elements by means of various light sources. Well
illustrated with many tables. Presents mathemati-
cal formula for the determination of the reabsorption
of spectral lines. The article is reviewed by Fish-
man (Kazan). Vvedenskiy (MEI Moscow) and Rusanov
(VIMS Moscow). They state that the experiments were

24T91

USSR/Physics (Contd)

May/Jun 1947

well conducted and reliable. Submitted at the In-
stitute of Physics, Academy of Sciences of the USSR.

24T91

CA

3

The influence of anions on the intensity of spectral lines of elements. P. M. Efendiev (Azerbaijani Acad. Sci., U.S.S.R.). *Zavodskaya Lab.* 13, 1402-7 (1947).—Solns. of the nitrates, chlorides, and sulfates of Cd, Au, Zn, Ni, and In, and of the iodides of Cd, Au, and Zn were exposed spectrographically. No influence was observed when the soln. was fed into either a high-voltage arc or a condensed spark with a Nedler-Efendiev fulgurator (C.A. 38, 6231¹), but a diminution of intensity in the order NO_3^- , I^- , Br^- , Cl^- , SO_4^{--} was noted for all of the above metals when a spark was struck to the open liquid surface. No internal standard was used.

Cyrus Feldman
translating and ...

CA

Influence of the thickness of the layer of liquid on the intensity of spectral lines excited from the solution. P. M. Gremlov. *Izv. Akad. Nauk S.S.S.R., Ser. Fiz.* 12, 471-4 (1948). --The intensities were detd. with one electrode of a 10-kv. arc (20-30 millamp.) immersed in the soln. of the salt, with its end kept just underneath and at an adjustable distance from the liquid surface. the thickness of the liquid layer supported by the electrode was thus kept const. at 0.1, 0.5, 1.0, 2.0, or 3.0 mm. The salts of the following elements (concn. in % in parentheses) and the following spectral lines were investigated: Cu (0.005) 3247.84, 3273.91; Co (0.1) 3543.5, 3405.1, 2519.8; Cu (0.0001) 3247.84; Sb (0.1) 2529.5, 2508.06, 2677.9, 3020.8; Au (0.00002) 2675.05; Ag (0.0001) 3290.69; Hg (0.001) 2530.32; Te (0.01) 2485.7; H (0.05) 2407.73; Ru (0.05) 3498.95; Cr (0.1) 3283.5; Ca (1 x 10⁻⁴ - 1 x 10⁻³) 4555.35; Ba (1 x 10⁻⁴ - 1 x 10⁻³) 4554.05. In all cases, the intensities increase with decreasing thickness of the liquid layer, and very strongly so between 0.5 and 0.1 mm. It follows that when a bulk liquid is used as electrode, the concn. of excited atoms in the light source is very much lower than with a thin liquid layer supported by an electrode. N. Thon

EFENDIYEV, F. M.

Efendiyev, F. M. and Zak, S. A. - "A study of the illuminating properties of petroleum oils", Izvestiya Akad. nauk Azerbaydzh. SSR, 1949, No. 2, p. 19-27, (Resume in Azerbaijani), - Bibliog: 6 items.

SO: U-411, 17 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 20, 1949).

EFENDIYEV. F. M.

Doc Chem Sci

Dissertation: "Development of the Combined Quantitative-Spectroscopic Method for Analysis of Microelements in a Solution and its Application for Examination of the Sulfide Ores of Aziaberdahan." 10/5/50

Moscow Order of Lenin State V imeni M. V. Lomonosov.

SO Vecheryaya Moskva
Sum 71

CA

2.2

Basic principles of a systematic method of luminescence investigation of petroleum and bitumen. F. M. Efendiev, *Phys. Math. Inst. Acad. Sci. Azerbaijan S.S.R.*, *Izv. Akad. Nauk S.S.R., Ser. Fiz.* 15, 782 (1951). The choice of solvent is important since quenching action of the solvent increases in the order ether < benzene < EtOH < CHCl₃ < CCl₄, the last being the best solvent. Estn. should be made by micro- or semimicro methods because the Soxhlet method is too long. The fluorescence color shifts to the red with an increase of heavy components in the bitumen. All spectra have a continuous band, the characteristics of which vary with the oil. Chromatographic luminescence methods allow better differentiation of bitumens and oil than chem. methods. Quant. methods have been de-

veloped (1) without standards (a) by detn. of the lowest concn. at which luminescence can be observed (this can vary between 10⁻⁴ and 10⁻⁶% depending on type); (b) estn. of luminescence intensity; (2) with standards; (3) by photometry. S. Pakower

USSR/Chemical Technology. Chemical Products and Their Application -- Treatment of
natural gases and petroleum. Motor fuels. Lubricants,

EFENDIYEV, F. M.

✓ Development of a combined spectrochemical method of analyzing ores and rocks for trace elements. I. Method of determining antimony, tellurium, germanium, chromium, and cadmium. F. M. Efendiev. *Trudy Inst. Fiz. i Mat., Akad. Nauk Azerbaidzhan. S.S.R.* 6, 3-20(1963).—The method consists of dissolving the mineral in an appropriate solvent and then spectrographically analyzing the extract. A comprehensive table of spectrographic data is given for each of these elements, including wave lengths and intensities of emissions from elements interfering with each line. Recommended solvents for each element are: Sb, H_2SO_4 ; Te, $HCl + HNO_3$; Ge, H_2SO_4 ; Cr, Na_2O_2 fusion; Cd, $HCl + HNO_3$. (Sb and Ge form volatile compds. with HCl).
Malcolm Anderson

EFENDIYEV, F.M., doktor khimicheskikh nauk.

Investigation of petroleum luminescence. Priroda 42 no.12:82-85 D '53.
(MIRA 6:11)

1. Institut fiziki i matematiki Akademii nauk Azerbaydzhanskoy SSR.
(Petroleum) (Luminescence)

"APPROVED FOR RELEASE: 08/22/2000

CIA-RDP86-00513R000412010006-7

APPROVED FOR RELEASE: 08/22/2000

CIA-RDP86-00513R000412010006-7"

EFENDIYEV, G.S.

Existence of a many-valued analytic continuability of a certain class of integrodifferential equations when zero is an eigenvalue of the rank $q \geq 0$. Uch. zap. AGU. Fiz.-mat. i khim. ser. no.4: 25-36 '59. (MIRA 16:6)

(Integrodifferential equations)

EFENDIYEV, Guseyn Akhmedovich

[Electron diffraction and its applications] Elektronlaryn
difraksiyasy ve onun tetbigi. Baky, Azerbaichan SSR Elmler
akademiasy neshriiaty, 1963. 39 p. [In Azerbaijani]
(MIRA 17:5)

EFENDIYEV , G. A.

PA 32/49T63

USSR/Metals
Tin Alloys
Copper Alloys

Sep 48

"Electronographic Study of Fine Coatings of Alloys
in a CuSn System," G. A. Efendiyev, Sci Res Inst of
Phys MGU, Azerbaydzhan State U, 6 3/4 pp

"Zhur Tekh Fiz" Vol XVIII, No 9

Presents results of electronographic study of alloys
of the CuSn system, prepared as thin films by
evaporation and condensation in a high vacuum.
Establishes formation of η , ξ , and ϵ phases. Sub-
mitted 17 Mar 48.

32/49T63

EFENDIYEV, G. A.

USSR/Chemical Technology.. Chemical Products and Their Application -- Silicates.
Glass. Ceramics. Binders, I-9

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5140

Author: Efendiyev, G. A., Aliyeva, A. G.

Institution: Azerbaydzhan University

Title: On Swelling of Clays

Original

Publication: Elmi eserler. Azerb. universiteti, Uch. zap. Azerb. un-t, 1955,
No 11, 37-42

Abstract: A determination has been made of the swelling (free and under pressures of 6, 12 and 20 kg/cm²) of clays from the construction site of the Mingechaurskaya hydroelectric station, measured by means of compression instruments (Khramushev, A. S., Kompressornyye ispytaniya glin kak metod geologicheskogo issledovaniya /Clay Compression Tests as a Method of Geological Investigations/, M., 1939).

Card 1/1

EFENDIYEV, G.A.
Category : USSR/Solid State Physics - Structural crystallography

E-3

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1080

Author : Efendiyev, G.A.

Inst : Azerbaydzhan Univ. USSR

Title : Powder Photographs with Variable Radius.

Orig Pub : Zh. tekhn. fiziki, 1956, 26, No 3, 646-648

Abstract : To plot lines for which $d < 4A$ which cannot be produced in ordinary cameras, the author proposes to shift the specimen towards the input diaphragm. An equation for θ is given for a definite displacement of the specimen.

Card : 1/1

"APPROVED FOR RELEASE: 08/22/2000

CIA-RDP86-00513R000412010006-7

APPROVED FOR RELEASE: 08/22/2000

CIA-RDP86-00513R000412010006-7"

78-3-3-9/47

The Employment of a New Metallographic Method for the Investigation of Alloys of the System Cu-Sn

methods. The great importance of this method becomes still better evident in the investigation of ternary systems. Besides the other metallographic methods for the investigation of alloys the electronographic method is of great help. There are 2 figures, 1 table, and 3 references, 3 of which are Soviet.

ASSOCIATION: Azerbaydzanskiy gos_universitet im. S. M. Kirova
(Azerbaydzhani State University imeni S. M. Kirov)

Card 2/2

8/137/61/000/012/071/149
A006/A101

AUTHORS: Efendiyev, G.A., Karpishina, N.V.

TITLE: Roentgenographical study of some ternary alloys of bismuth and antimony chalcogenides

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 12, 1961, 51, abstract 120362 ("Uch. zap. Azerb. un-t. Ser. fiz.-matem. i khim. n.", 1960, no. 4, 73 - 75)

TEXT: The X-ray method was employed to study the structure of some ternary alloys of Bi and Sb chalcogenides, in particular, $Sb_2S_3.Sb_2Te_3$, $Sb_2S_3.Sb_2Se_3$, $Sb_2Se_3.Sb_2Te_3$, $Bi_2S_3.Bi_2Te_3$, $Bi_2S_3.Bi_2Se_3$, $Bi_2S_3.Bi_2Te_3$, $Bi_2S_3.Sb_2S_3$, $Bi_2Se_3.Sb_2Se_3$ and $Bi_2Te_3.Sb_2Te_3$. Their parameters were determined. The ternary alloys were synthesized from initial binary compounds, which were also produced by synthesis. The ternary alloys investigated are solid solutions, since the lattice type of at least one of the initial binary components is preserved. With the aid of comparing the radiographs of initial components and ternary alloys, lattice syngonies of the latter are determined.
[Abstracter's note: Complete translation]

B. Turovskiy

Card 1/1

EFENDIYEV, G.A.; KAZINETS, M.M.

Electronographic investigation of phase formation processes in
the system Cu--Se. Izv.AN Azerb.SSR.Ser.fiz.-mat.i tekhn.nauk
no.5:91-98 '60. MIRA 14:4)

(Copper-selenium alloys)
(Phase rule and equilibrium)

S/058/61/000/009/027/050
A001/A101

AUTHORS: Efendiyev, G.A., Shafi-zade, R.B.

TITLE: Application of kinematic electron-diffraction examination to investigations of phase formation in Bi-Se double layers

PERIODICAL: Referativnyy zhurnal, Fizika, no. 9, 1961, 191, abstract 9E63
("Dokl. AN AzerbSSR, 1960, v. 16, no. 9, 833-836, Azerb. summary)

TEXT: The authors developed a method of taking electron-diffraction photographs on a moving film in the electron-diffraction analyzer $\Phi\Gamma$ (EG) for studying phase transformations proceeding when the specimen is heated. A Bi-Se alloy was investigated. It is shown that in this alloy the phase Bi_2Se_3 is formed during settling and a further annealing does not change the phase composition.

[Abstracter's note: Complete translation]

Card 1/1

24,7200

28075
S/181/61/003/009/007/039
B102/B104

AUTHORS: Efendiyev, G. A., and Shafizade, R. B.

TITLE: Electron-diffraction study of phase formation in Bi-Se double layers

PERIODICAL: Fizika tverdogo tela, v. 3, no. 9, 1961, 2564 - 2566

TEXT: The method of kinematic electron diffraction (A. Boettcher, Thun. Optik, 11, 22, 1954) was applied to study Bi-Se double layers. An "electronograph" of the type ЭГ(EG) made it possible to take pictures also at higher temperatures, and, thus, to record phase formation and phase transitions on the photographic plate. Bi-Se layers were decided upon as test specimens because of their particular interest in semiconductor engineering. The purpose of the investigation was to determine the succession of phase formations between the two layers, in addition to determining the nature of the phases and the conditions for phase formation and phase transition. The specimens were prepared by sputtering the two components onto each other in vacuum (10^{-5} mm Hg). The total thickness ranged between 100 and 400 Å. Three specimens were prepared:
Card 1/3

Electron-diffraction study...

28075
S/181/61/003/009/007/039
B102/B104

(1) Bi on Se, (2) Se on Bi, and (3) Bi + Se simultaneously. The following results were obtained: (1) Bi on amorphous selenium. The electron diffraction picture displays four diffuse lines (4.48, 3.05, 2.08, and 1.72 Å), all of which, except for the first one, derive from Bi_2Se_3 . If the specimens are heated for 1 min at 200°C the lines become sharply defined, and the one mentioned first vanishes, which means that recrystallization takes place without phase change. If Bi condenses on crystalline Se, Bi_2Se_3 will likewise result, but not all of the Bi and Se undergoes reaction. (2) If Se condenses on Bi, no Bi_2Se_3 will form without heating. It will form, however, on a 15-min heating at 100°C. The fact that the phase formation depends on the succession in which the components are sputtered is explained by the circumstance that Bi atoms reach the layer with a higher kinetic energy than Se atoms, and thus have the energy required for the Bi_2Se_3 formation. (3) The simultaneous sputtering of Bi + Se by Vekshinskiy's method gave rise to Bi_2Se_3 only, and the BiSe phase would not arise even if the concentration of components

Card 2/3

Electron-diffraction study...

28975
S/181/61/003/009/007/039
B102/B104

+

corresponded to this phase. This selectivity in phase formation was observed in all the experiments. To establish the phase transitions, kinematic electron-diffraction pictures were examined for 1.5 hr under heating from room temperature to 400°C. Only Bi_2Se_3 was found to form at first, and 20-min heating at 400°C was not accompanied by a phase change. BiSe lines are not allowed to appear until a further 40-min heating at about 400°C. 1.5-hr heating at 400°C is required for Bi to arise as the third phase, so that Bi_2Se_3 , BiSe, and Bi are present simultaneously. The following values were obtained for the shortest interatomic distances in the layer structure (D_{3d}^5 - $R\bar{3}m$ group):
Se-Se = 3.30 kX, Bi-SeI = 3.07 kX, Bi-SeII = 2.99 kX. There are 3 figures and 8 references: 7 Soviet and 1 non-Soviet.

ASSOCIATION: Institut fiziki AN AzSSR Baku (Institute of Physics of the AS Azerbaydzhanskaya SSR, Baku)

SUBMITTED: March 6, 1961

Card 3/3

S/137/61/000/012/070/149
A006/A101

AUTHORS: Efendiyev, G. A., Ivanova, I. V. . . .

TITLE: Electronographic investigation of phase formation in binary Pd-S and Pd-Se layers

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 12, 1961, 51, abstract 129361 (Dokl. AN AzerbSSR, 1961, v. 17, no. 4, 279 - 281, Azerb. summary)

TEXT: The method of fast electrons (V 60 - 70 kv) was employed to study conditions of phase formation in binary Pb-S and Pb-Se layers. Thin layers, about 300 - 600 Å thick, were obtained by consecutive evaporation and condensation of elements on a celluloid backing in a vacuum of about 10^{-5} mm Hg. The specimens obtained were investigated both prior to and after annealing at about 120°C during 5 - 20 minutes. It is shown that during the deposition of Pb on Se and Se on Pb, a PbSe compound is formed. Annealing does not entail changes in the phase composition. During the deposition of Pb on S the PbS compound is formed without annealing, while during S deposition on Pb, the PbS phase is not formed

Card 1/2

Electronographic investigation...

S/137/61/000/012/070/149
A006/A101

without annealing, S deposited on a celluloid backing proved to be amorphous, and crystalline when deposited on Pb. It is assumed that this is caused by the effect of the nature of the backing.

B. Turovskiy

[Abstracter's note: Complete translation]

Card 2/2

35661

S/020/62/143/001/019/030
B104/B106

18.11.60

AUTHORS: Efendiyev, G. A., and Ivanova, I. V.

TITLE: Phase transformations in thin Ni-Se layers

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 143, no. 1, 1962, 95 - 96

TEXT: By means of electron diffraction studies it can be proved that if Ni and Se from two different sources are condensed simultaneously onto backings the system Ni-Se forms NiSe_2 , NiSe (β -modification), and Ni_3Se according to the concentrations of the components. No γ -modification of NiSe was observed. The phase formation and the phase transformations of Se double layers on Ni were studied on a series of photographs (3 pictures within 12 minutes at temperatures between 20 and 400°C). In the condensation of Se on Ni NiSe_2 arises in the form of fine crystals. At temperatures above 150°C NiSe_2 passes into β - NiSe , which is the only phase existing above 300°C. On further heating in vacuo this phase gradually passes into Ni_3Se_2 . The following scheme is given:

Card 1/2

Phase transformations in thin...

S/020/62/143/001/019/030
B104/B108

(Ni + Se) $\xrightarrow[\text{at } 200^{\circ}\text{C}]{\text{condensation}}$ NiSe_2 $\xrightarrow[\text{to } 150^{\circ}\text{C}]{\text{heating}}$ NiSe_2 $\xrightarrow[\text{to } 150 - 300^{\circ}\text{C}]{\text{heating}}$
finely crystalline
disperse

β -NiSe $\xrightarrow[\text{to } 300 - 400^{\circ}\text{C}]{\text{heating}}$ Ni_3Se_2
crystalline crystalline

There are 1 figure and 6 references: 4 Soviet and 2 non-Soviet. The two references to English-language publications read as follows: J. Trillat, N. Takahashi, Acta Cryst., 7, 15 (1954); R. Thun, Rev. Sci. Instr., 30, 6 (1959).

ASSOCIATION: Institut fiziki Akademii nauk AzerbSSR (Institute of Physics of the Academy of Sciences Azerbaydzhanskaya SSR)

PRESENTED: July 5, 1961, by G. V. Kurdyumov, Academician

SUBMITTED: June 29, 1961

X

Card 2/2

13529
S/233/62/000/004/001/001
B104/B102

26.2532
AUTHORS:

Efendiyev, G. A., Sultanov, F. S., and Iskenderov, R. M.

TITLE:

Thermo-emf of thin bismuth layers

PERIODICAL:

Izvestiya Akademii nauk Azerbaydzhanskoy SSR. Seriya
fiziko-matematicheskikh i tekhnicheskikh nauk, no. 4, 1962,
65 - 69

TEXT: In the studies of the Bi-Se and Bi-Te systems Bi was evaporated in vacuo and condensed onto chemically decontaminated glass plates (20·90 mm², 70°C). The layers were from 80 to 20000 Å thick. In the experimental arrangement (Fig. 1) the glass plate was laid onto two brass electrical heaters at different temperatures. The thermo-emf and the temperatures were measured by compensation methods using the two copper-constantan thermocouples T₁ and T₂ at an atmospheric pressure in films of continuously decreasing thicknesses. The contact pressure of the thermocouples could be varied by the two loads P₁ and P₂. The thermocouples were 8 mm apart. The temperatures of the hot junctions were 40 - 50°C, and the temperature drop

Card 1/8

Thermo-emf of thin bismuth layers

S/233/62/000/004/001/001
B104/B102

along the specimen 4 - 6°C. The measurements were carried out immediately after the specimens had been produced and after annealing at 100, 150 and 200°C for 15 - 60 min. The thermo-emf remained constant in thicknesses up to 0.2 to 0.15 μ and is equal to that of Bi in bulk. The thermo-emf decreases slowly between 1500 and 1000 Å, more rapidly if the thickness is further reduced. At thicknesses below 150 Å the thermo-emf remains constant. The thermo-emf changed from $\alpha = -65 \mu\text{V}/\text{deg}$ for $\sim 2000 - 20000$ Å to $\alpha = -10 \mu\text{V}/\text{deg}$ for 80 Å. The results obtained prove that the thermo-emf of thin layers depends on the electron mean free path. There are 4 figures.

Card 2/3

2

S/120/63/000/001/037/072
EO32/E314

AUTHORS: Efendiyev, G.A. and Shafi-Zade, R.B.
TITLE: Kinematic attachment for the Θ (EG) electron-diffraction apparatus
PERIODICAL: Pribery i tekhnika eksperimenta, no. 1, 1963, 142 - 145
TEXT: An attachment for the horizontal electron-diffraction apparatus described by Vaynshteyn and Pinsker (Elektronograf dlya strukturnykh issledovaniy (Electron diffraction in structural studies) 1958, In-t informatsii.) is reported. It may be used to investigate the phase-formation and phase-transformation in the Cu-Se, Bi-Se and Ni-Se systems. The principle of the device is shown in Fig. 1, in which 1 is the electron beam, 2 object, 3 diffraction cone, 4 horizontal slit, 5 screen and 6 a photographic film moving in the direction indicated by the arrow. It is clear that if there are changes in the properties of the object the appearance of the lines recorded on the moving film will change with time and thus a continuous record of the changes occurring in the object may be deduced.. The results obtained with Card 1/2

Kinematic attachment

S/120/63/000/001/037/072
EO32/E314

this apparatus have been described by the authors elsewhere and it is stated that further studies are being made. In particular, the crystallization of Tl-Se is being investigated at temperatures below 100 °C. There are 5 figures.

ASSOCIATION: Institut fiziki
AN AzerbSSR (Institute
of Physics of the
AS AzerbSSR)

SUBMITTED: March 21, 1962

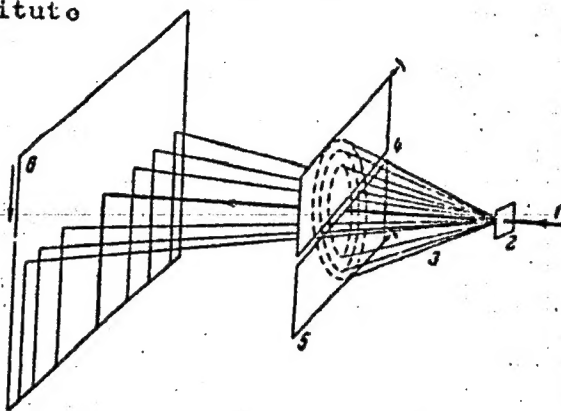


Fig. 1:

Card 2/2

EFENDIYEV, G.A.; IVANOVA, I.V.

Electron diffraction study of phase formation and phase transformations in thin Ni - Se films. Fiz. tver. tela 5 no.10:2854-2858 0 '63. (MIRA 16:11)

1. Institut Fiziki AN Azerbaydzhanskoy SSR, Baku.

EFENDIYEV, G.A.; ALIYEV, F.I.

Kinetics of the reaction between In and Sb films by the
kinematic method of electron diffraction. Dokl. AN SSSR
165 no.5:1130-1131 D '65. (MIRA 19:1)

1. Institut fiziki AN Azer-SSR. Submitted May 4, 1965.